

ARM SGP/GIF Radiometer Characterization System (RCS)
36.606 N Latitude 97.486 W Longitude 320 Meters AMSL Time Zone -6

January 2004

Solar Azimuth Angle
Hourly and Daily Averages
Instrument: Calculated
Degrees

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily	
1	186.8	112.1	112.1	112.1	112.1	112.1	112.1	116.8	126	136.7	149.2	163.6	179.2	195	209.5	222.2	233	242.4	247.9	248	248	248	248	248	248	180
2	186.8	112	112	112	112	112	112	116.7	125.9	136.6	149	163.4	179.1	194.9	209.4	222.2	233	242.4	248	248.1	248.1	248.1	248.1	248.1	248.1	180
3	189.1	111.9	111.9	111.9	111.9	111.9	111.9	116.5	125.8	136.4	148.9	163.3	179	194.8	209.4	222.1	233	242.4	248.1	248.2	248.2	248.2	248.2	248.2	248.2	180
4	189.1	111.8	111.8	111.7	111.7	111.7	111.7	116.4	125.6	136.3	148.7	163.1	178.9	194.7	209.3	222.1	233	242.4	248.2	248.3	248.4	248.4	248.4	248.4	248.4	180
5	189.1	111.6	111.6	111.6	111.6	111.6	111.6	116.2	125.5	136.1	148.6	163	178.7	194.6	209.3	222.1	233	242.4	248.3	248.5	248.5	248.5	248.5	248.5	248.5	180
6	191.4	111.5	111.5	111.5	111.5	111.5	111.5	116.1	125.3	135.9	148.4	162.8	178.6	194.5	209.2	222.1	233	242.5	248.4	248.6	248.6	248.6	248.6	248.6	248.7	180
7	191.4	111.3	111.3	111.3	111.3	111.3	111.3	115.9	125.1	135.8	148.3	162.7	178.5	194.4	209.2	222	233	242.5	248.6	248.8	248.8	248.8	248.8	248.8	248.8	180
8	193.8	111.2	111.2	111.2	111.2	111.1	111.1	115.8	125	135.6	148.1	162.6	178.4	194.4	209.1	222	233	242.5	248.7	249	249	249	249	249	249	180
9	193.8	111	111	111	111	111	111	115.6	124.8	135.5	148	162.4	178.3	194.3	209.1	222	233.1	242.6	248.8	249.1	249.1	249.1	249.1	249.1	249.2	180
10	196.1	110.8	110.8	110.8	110.8	110.8	110.8	115.4	124.6	135.3	147.8	162.3	178.1	194.2	209.1	222.1	233.1	242.6	249	249.3	249.3	249.3	249.3	249.3	249.3	180.1
11	196.2	110.6	110.6	110.6	110.6	110.6	110.6	115.2	124.5	135.1	147.6	162.1	178	194.1	209.1	222.1	233.1	242.7	249.1	249.5	249.5	249.5	249.5	249.5	249.5	180
12	196.2	110.4	110.4	110.4	110.4	110.4	110.4	115.1	124.3	134.9	147.4	162	177.9	194.1	209	222.1	233.2	242.7	249.3	249.7	249.7	249.7	249.7	249.7	249.7	180
13	198.6	110.2	110.2	110.2	110.2	110.2	110.2	114.9	124.1	134.8	147.3	161.8	177.8	194	209	222.1	233.2	242.8	249.5	249.9	249.9	249.9	249.9	249.9	250	180
14	198.7	110	110	110	110	110	110	114.7	123.9	134.6	147.1	161.7	177.7	194	209	222.1	233.3	242.9	249.7	250.1	250.1	250.2	250.2	250.2	250.2	180
15	201.1	109.8	109.8	109.8	109.8	109.8	109.8	114.5	123.7	134.4	146.9	161.5	177.6	193.9	209	222.2	233.4	243	249.8	250.4	250.4	250.4	250.4	250.4	250.4	180.1
16	201.1	109.6	109.6	109.6	109.6	109.5	109.5	114.3	123.5	134.2	146.8	161.4	177.5	193.9	209	222.2	233.4	243.1	250	250.6	250.6	250.6	250.6	250.6	250.6	180
17	201.2	109.3	109.3	109.3	109.3	109.3	109.3	114.1	123.3	134	146.6	161.2	177.4	193.8	209	222.3	233.5	243.2	250.2	250.8	250.9	250.9	250.9	250.9	250.9	180
18	203.6	109.1	109.1	109.1	109.1	109.1	109.1	113.9	123.1	133.8	146.4	161.1	177.3	193.8	209.1	222.3	233.6	243.3	250.4	251.1	251.1	251.1	251.1	251.1	251.1	180.1
19	203.7	108.8	108.8	108.8	108.8	108.8	108.8	113.7	122.9	133.6	146.2	160.9	177.2	193.7	209.1	222.4	233.7	243.4	250.6	251.4	251.4	251.4	251.4	251.4	251.4	180
20	203.8	108.6	108.6	108.6	108.5	108.5	108.6	113.5	122.7	133.4	146	160.8	177.1	193.7	209.1	222.5	233.8	243.5	250.8	251.6	251.6	251.6	251.7	251.7	251.7	180
21	206.3	108.3	108.3	108.3	108.3	108.3	108.3	113.3	122.5	133.2	145.9	160.6	177	193.7	209.1	222.5	233.9	243.6	251	251.9	251.9	251.9	251.9	251.9	251.9	180.1
22	206.4	108	108	108	108	108	108	113	122.3	133	145.7	160.5	176.9	193.7	209.2	222.6	234	243.8	251.3	252.2	252.2	252.2	252.2	252.2	252.2	180.1
23	206.5	107.7	107.7	107.7	107.7	107.7	107.7	112.8	122.1	132.8	145.5	160.3	176.8	193.6	209.2	222.7	234.1	243.9	251.5	252.5	252.5	252.5	252.5	252.5	252.5	180
24	206.6	107.5	107.4	107.4	107.4	107.4	107.4	112.6	121.9	132.6	145.3	160.2	176.7	193.6	209.3	222.8	234.2	244	251.7	252.8	252.8	252.8	252.8	252.8	252.8	180
25	209.1	107.2	107.1	107.1	107.1	107.1	107.1	112.4	121.7	132.4	145.1	160	176.7	193.6	209.3	222.9	234.4	244.2	252	253.1	253.1	253.1	253.1	253.1	253.1	180.1
26	209.3	106.8	106.8	106.8	106.8	106.8	106.8	112.1	121.5	132.2	144.9	159.9	176.6	193.6	209.4	223	234.5	244.4	252.2	253.4	253.4	253.4	253.4	253.4	253.4	180.1
27	209.4	106.5	106.5	106.5	106.5	106.5	106.5	111.9	121.2	132	144.8	159.7	176.5	193.6	209.5	223.1	234.7	244.5	252.4	253.7	253.7	253.7	253.7	253.7	253.8	180
28	209.5	106.2	106.2	106.2	106.2	106.2	106.2	111.7	121	131.8	144.6	159.6	176.4	193.6	209.5	223.3	234.8	244.7	252.7	254	254	254.1	254.1	254.1	254.1	180
29	209.6	105.9	105.9	105.9	105.8	105.8	105.9	111.4	120.8	131.6	144.4	159.5	176.4	193.6	209.6	223.4	235	244.9	252.9	254.4	254.4	254.4	254.4	254.4	254.4	180
30	212.3	105.6	105.5	105.5	105.5	105.5	105.6	111.2	120.6	131.4	144.2	159.3	176.3	193.7	209.7	223.5	235.1	245	253.2	254.7	254.7	254.7	254.7	254.7	254.8	180.1
31	212.4	105.2	105.2	105.2	105.2	105.2	105.3	111	120.3	131.2	144	159.2	176.2	193.7	209.8	223.7	235.3	245.2	253.5	255.1	255.1	255.1	255.1	255.1	255.1	180.1
Avg	200.3	109.2	109.2	109.2	109.2	109.2	109.2	114.1	123.4	134.1	146.7	161.4	177.6	194	209.3	222.5	233.7	243.3	250.3	250.9	250.9	250.9	251	251	251	180
S D	8	2.1	2.1	2.1	2.1	2.1	2.1	1.8	1.7	1.7	1.6	1.3	0.9	0.4	0.2	0.5	0.7	0.9	1.7	2.2	2.2	2.2	2.2	2.2	2.2	0
S/A	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0	0	0	0	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0
Min	186.8	105.2	105.2	105.2	105.2	105.2	105.3	111	120.3	131.2	144	159.2	176.2	193.6	209	222	233	242.4	247.9	248	248	248	248	248	248	180
Max	212.4	112.1	112.1	112.1	112.1	112.1	112.1	116.8	126	136.7	149.2	163.6	179.2	195	209.8	223.7	235.3	245.2	253.5	255.1	255.1	255.1	255.1	255.1	255.1	180.1
n	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	44640

Data Recovery: 0.0% missing; 0.0% failed QC -- 44640 total measurements.

Instrument: Calculated Serial Number: SOLPOS Calibration Factor: <http://redc.nrel.gov/solar/codesandalgorithms/solpos/> Calibration Date: N/A

Data & Flag	Hour Column	Day Column
<value> *	> 20% Missing	> 10% Missing
<value> ?	> 20% Fail QC	> 10% Fail QC
<blank> *	> 90% Missing	> 90% Missing
<blank> ?	> 90% Fail QC	> 90% Fail QC

Note: Daily values with a missing flag (*) are not used in monthly statistics.

Prepared by: Afshin M. Andreas, NREL